AFCTN Test Report 94-138

AFCTB-ID 94-085

TMSS Parsing Test

MIL-M-9977J, Appendix D, Nonnuclear Munitions Loading Procedures

Document Type Definition

MAXIMA Corporation

DISA Contract #DCA100-93-D-0065

Quick Short Test Report

23 June 1994

Prepared for
Electronic Systems Center
Air Force CALS Program Office
HQ ESC/AV-2
4027 Colonel Glenn Hwy Suite 300
Dayton OH 45431-1672

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MIL-M-9977J, Appendix D,

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Prepared By
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Air Force CALS Test Bed

Notification of Test Results

23 June 1994

This notice documents the results of an Air Force CALS Test Bed (AFCTB) Quick Short Test Report (QSTR) evaluation of data submitted by:

MAXIMA Corporation

Identified as follows:

Title:	**MIL-M-9977J, Appendix D, Nonnuclear Munitions Loading Procedures, DTD Parsing Test**
Program:	**DISA**
Program Office:	**DISA**
Contract No.:	**DCA100-93-D-0065**
QSTR No.:	**AFCTB-ID 94-085**

Received on the following media: **3.5" Diskette**

The results of the QSTR evaluation are as follows:

MIL-STD-1840A Media Format:	**N/A**
MIL-D-28000A IGES:	**N/A**
MIL-M-28001B SGML:	**Pass**
MIL-R-28002A Raster:	**N/A**
MIL-D-28003 CGM:	**N/A**

Formal results with associated disclaimer are documented and available from the AFCTB.

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Phone: 513-257-3085   FAX: 513-257-5881**

Contents

1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of this informal test is to analyze Air Force Document Type Definitions (DTDs) for Standard Generalized Markup Language (SGML) syntax, using several commercial and public domain SGML parsers, prior to placing them in the Defense Information Systems Agency (DISA) Asset Source for Software Engineering Technology (ASSET) repository.

2. Test Parameters

Test Plan: AFCTB 94-085

Date of
Evaluation: 23 June 1994

Evaluator: George Elwood
                                    Air Force CALS Test Bed
                                    DET 2 HQ ESC/AV-2P
                                    4027 Colonel Glenn Hwy
                                    Suite 300
                                    Dayton OH 45431-1672

Data
Originator: Kay Hill
                                    MAXIMA Corporation
                                    2372 Lakeview Drive
                                    Beavercreek OH 45431
                                    (513) 427-5888

Data
Description: Technical Manual Test
                                            1 DTD

Data
Source System:

                        Text/SGML
                                SOFTWARE
                                        Unknown

Evaluation Tools Used:

                        MIL-M-28001 (SGML)
                                PC 486/50
                                        Exoterica *XGMLNormalizer v1.2e3.2*
                                        Exoterica *Validator v2.2 exl*
                                        McAfee & McAdam *Sema Mark-it v2.3*
                                        Public Domain *sgmls 1.1*

Standards
Tested: MIL-M-28001B

3. 1840A Analysis

3.1 External Packaging

The 3.5" diskette was hand delivered to the Air Force CALS Test Bed (AFCTB). It was not enclosed in any type of container.

The files received by the AFCTB were not MIL-STD-1840A. The files were not named per the standard conventions, as the stated purpose of the evaluation was the basic data structure.

4. SGML Analysis

The AFCTB has several parsers available for evaluating submitted DTD and text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report.

The goal was to configure the DTD under analysis as it would normally be used. However, for this analysis it was necessary to modify the DTD adding the "DOCTYPE doc [" statement to the start and the companion "]>" to the end of the DTD under evaluation, as stated in the comments of the DTD. If the parser did not support a formal file pointing to the location of the ISO character sets, this was added.

The DTD under evaluation, MIL-M-9977J, Appendix D, Nonnuclear Munitions Loading Procedures, called a sequence of companion DTDs, each in turn, as illustrated by the diagram below. These DTDs were delivered on the same diskette as the DTD to be evaluated. The DTDs were not changed except to point to the succeeding DTD in the sequence and to insert the location of the ISO character set files in the D784CB0.A3 DTD.

MIL-M-9977J Nonnuclear Munitions Loading Procedures DTD

D977JD0.ORG --> D977JA0.ORG --> D784CB0.A3

The following notes apply to the parsing analysis as indicated in the ensuing paragraphs.

Note 1. Entity parameters defined more than once is a vaild SGML construct. The duplicate definition errors and/or warnings in this analysis do not indicate any problems.

Note 2. Some of the parsers report mixed content model warnings. The use of such content models is normally unnecessary and therefore not normally recommended. Record boundaries within elements of associated instances may be misinterpreted where a mixed content model exists in the DTD.

Note 3. The occurrences of warnings "references defined, but not used," appeared because portions of the called DTD, i.e., MIL-M38784C, were not used. They were not used because the entity definitions of the DTD under analysis altered the execution path in the called DTD. The warnings in this analysis do not indicate any problems.

4.1 Exoterica Validator

The DTD file was evaluated using the Exoterica *Validator exl* parser. The basic DTD was modified by placing the concrete syntax file and "<!DOCTYPE doc [" at the start and the "]>" at the end. No errors were reported by the parser.

The parser reported 52 total warnings of two types. The first type warning was for a parameter entity declared more than once.   See Note 1 above.

```
<!-- **Warning** in "\xgml\9485.dtd", line 124:
   A parameter entity name has been declared more than once.
   The entity is "%shortitle".
   <!ENTITY % shortitle " " >
            ^^^^^^^^^^
-->
```

The second type warning relates to elements defined but not used in any content model.   See Note 3 above.

```
<!-- **Warning** in "\xgml\9485.dtd", line 173:
   An element is not allowed in the document instance because it does not
   appear in any accessible content model or it is completely excluded.
   The element is "ADDRESS".
-->
```

4.2   Exoterica XGML Normalizer

The DTD file was parsed using the Exoterica *XGMLNormalizer* parser.   The concrete syntax and "<!DOCTYPE doc [" were added to the start and "]>" to the end of the file.   No errors or warnings were issued by this utility.

4.3   Public Domain sgmls

The DTD file was evaluated using the Public Domain *sgmls v1.1* parser.   The file was modified by adding the "<!DOC-TYPE doc [" to the start and "]>" to the end of the file as stated in the comments in the DTD.   File D784CB0.A3 location was inserted into the DTD.   The parser reported 18 total warnings of the same type.   This type warning was for duplicate definitions.   See Note 1 above.

```
sgmls: Warning at \ws\9485.dtd, line 52 in declaration parameter 4:
      Duplicate specification occurred for "%shortitle"; duplicate ignored
```

4.4   Sema Mark-it

The DTD file was evaluated using McAfee & McAdam's *Sema Mark-it v2.3* parser.   The file was modified by adding the concrete syntax and "<!DOCTYPE doc [" to the start and "]>" to the end of the file.   The parser reported no errors or warnings for the file.

5. Conclusions and Recommendations

The file D977JD0.ORG, MIL-M-9977J, Appendix D, Nonnuclear Munitions Loading Procedures, conforms to the SGML syntax of ISO Standard 8879, as required by the CALS MIL-M-28001B specification.

The errors, warnings, and comments reported by the parsers used in this evaluation do not indicate invalid SGML syntax. However, the mixed content model flagged by warnings from one of the five parsers, may cause problems in the use of this DTD. See Note 3, Paragraph 4, above.

Recommend the DTD be changed to eliminate the mixed content model. If this is not possible, users should be alerted to the potential problems that may occur in the application of the DTD, and proper guidance should be provided users to avoid the potential problems in the use of this DTD.

6. Appendix A - Detailed SGML Analysis

6.1 Exoterica Validator

```
<!-- **Warning** in "\xgml\9485.dtd", line 124:
   A parameter entity name has been declared more than once.
   The entity is "%shortitle".
   <!ENTITY % shortitle " " >
             ^^^^^^^^^^
-->
<!-- **Warning** in "c:\ws\977j.dtd" (entity "%mnucbasld"), line 29,
      used in "\xgml\9485.dtd", line 131:
   A parameter entity name has been declared more than once.
   The entity is "%bodyele".
   <!ENTITY % bodyele "(basinfo, bomweapld, practbl)" >
             ^^^^^^^^
-->
   The entity is "%shortitleuse".
   The entity is "%shortitle".
   The entity is "%shortitle".
   The entity is "%titles".
   The entity is "%unl1".
   The entity is "%gen1".
   The entity is "%rack1".
-->

<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 37,
      used in "c:\ws\977j.dtd" (entity "%mnucbasld"), line 94,
      used in "\xgml\9485.dtd", line 131:
   A parameter entity name has been declared more than once.
   The entity is "%shortitleuse".
   <!ENTITY % shortitleuse "IGNORE" >
             ^^^^^^^^^^^^^
-->
   The entity is "%shortitle".
   The entity is "%shortitle".
   The entity is "%frnt".
   The entity is "%titles".
   The entity is "%bodyele".
   The entity is "%nparcon".
   The entity is "%sect".
   The entity is "note5".
-->
```

```
<!-- **Warning** in "\xgml\9485.dtd", line 173:
   An element is not allowed in the document instance because it does not
   appear in any accessible content model or it is completely excluded.
   The element is "ADDRESS".
-->

   The element is "BASINFO".
   The element is "BOMBWEAPSECT".
   The element is "BOMWEAPDESC".
   The element is "BOMWEAPLD".
   The element is "CHAPTER".
   The element is "CHGINSSHT".
   The element is "CHGLIST".
   The element is "CHGREC".
   The element is "DDCHAPTER".
   The element is "DDDESC".
   The element is "DDINDEX".
   The element is "DDINTRO".
   The element is "DDLIST".
   The element is "DDSHEET".
   The element is "DEPLOY".
   The element is "DOC".
   The element is "DOCNUCBASLD".
   The element is "DOCPART".
   The element is "FERRYPROC".
   The element is "ILLUSLIST".
   The element is "INSERTPG".
   The element is "INTRO".
   The element is "NONSTRTOSTR".
   The element is "PGNO".
   The element is "PRACTBL".
   The element is "PRACTBLSECT".
   The element is "PREFACE".
   The element is "REMOVEPG".
   The element is "STRNONSTR".
   The element is "SUPPEQDESC".
   The element is "TABLELIST".
   The element is "VOLUME".
   The element is "WARNPAGE".
-->
```

```
<!-- Capacity points/limits:
     TOTALCAP =164729/200000
     ENTCAP   =13696/200000
     ENTCHCAP =14067/70000
     ELEMCAP  =6112/70000
     GRPCAP   =37856/70000
     EXGRPCAP =960/70000
     EXNMCAP  =1888/70000
     ATTCAP   =65632/200000
     ATTCHCAP =1635/70000
     AVGRPCAP =22624/70000
     NOTCAP   =96/70000
     NOTCHCAP =163/70000
     IDCAP    =0/70000
     IDREFCAP =0/70000
     MAPCAP   =0/70000
     LKSETCAP =0/70000
     LKNMCAP  =0/70000
-->
<!-- 0 errors and 52 warnings reported. -->
```

6.2 Public Domain sgmls Log

```
sgmls: Warning at \ws\9485.dtd, line 52 in declaration parameter 4:
       Duplicate specification occurred for "%shortitle"; duplicate ignored
sgmls: In file included at \ws\9485.dtd, line 59:
       Warning at c:\ws\977j.dtd, line 29 in declaration parameter 4:
       Duplicate specification occurred for "%bodyele"; duplicate ignored
sgmls: In file included at \ws\9485.dtd, line 59:
       Warning at c:\ws\977j.dtd, line 33 in declaration parameter 4:
       Duplicate specification occurred for "%shortitleuse"; duplicate ignored
sgmls: In file included at \ws\9485.dtd, line 59:
       Warning at c:\ws\977j.dtd, line 37 in declaration parameter 4:
       Duplicate specification occurred for "%shortitle"; duplicate ignored
sgmls: In file included at \ws\9485.dtd, line 59:
       Warning at c:\ws\977j.dtd, line 41 in declaration parameter 4:
       Duplicate specification occurred for "%shortitle"; duplicate ignored
sgmls: In file included at \ws\9485.dtd, line 59:
       Warning at c:\ws\977j.dtd, line 43 in declaration parameter 4:
       Duplicate specification occurred for "%titles"; duplicate ignored
sgmls: In file included at \ws\9485.dtd, line 59:
       Warning at c:\ws\977j.dtd, line 46 in declaration parameter 4:
       Duplicate specification occurred for "%unl1"; duplicate ignored
sgmls: In file included at \ws\9485.dtd, line 59:
       Warning at c:\ws\977j.dtd, line 50 in declaration parameter 4:
       Duplicate specification occurred for "%gen1"; duplicate ignored
sgmls: In file included at \ws\9485.dtd, line 59:
       Warning at c:\ws\977j.dtd, line 53 in declaration parameter 4:
       Duplicate specification occurred for "%rack1"; duplicate ignored
sgmls: In file included at \ws\9485.dtd, line 59:
       In file included at c:\ws\977j.dtd, line 94:
       Warning at i:\dtd\784c.dtd, line 37 in declaration parameter 4:
       Duplicate specification occurred for "%shortitleuse"; duplicate ignored
sgmls: In file included at \ws\9485.dtd, line 59:
       In file included at c:\ws\977j.dtd, line 94:
       Warning at i:\dtd\784c.dtd, line 41 in declaration parameter 4:
       Duplicate specification occurred for "%shortitle"; duplicate ignored
sgmls: In file included at \ws\9485.dtd, line 59:
       In file included at c:\ws\977j.dtd, line 94:
       Warning at i:\dtd\784c.dtd, line 45 in declaration parameter 4:
       Duplicate specification occurred for "%shortitle"; duplicate ignored
sgmls: In file included at \ws\9485.dtd, line 59:
       In file included at c:\ws\977j.dtd, line 94:
       Warning at i:\dtd\784c.dtd, line 109 in declaration parameter 4:
       Duplicate specification occurred for "%frnt"; duplicate ignored
```

sgmls: In file included at \ws\9485.dtd, line 59:
       In file included at c:\ws\977j.dtd, line 94:
       Warning at i:\dtd\784c.dtd, line 126 in declaration parameter 4:
       Duplicate specification occurred for "%titles"; duplicate ignored
sgmls: In file included at \ws\9485.dtd, line 59:
       In file included at c:\ws\977j.dtd, line 94:
       Warning at i:\dtd\784c.dtd, line 165 in declaration parameter 4:
       Duplicate specification occurred for "%bodyele"; duplicate ignored
sgmls: In file included at \ws\9485.dtd, line 59:
       In file included at c:\ws\977j.dtd, line 94:
       Warning at i:\dtd\784c.dtd, line 177 in declaration parameter 4:
       Duplicate specification occurred for "%nparcon"; duplicate ignored
sgmls: In file included at \ws\9485.dtd, line 59:
       In file included at c:\ws\977j.dtd, line 94:
       Warning at i:\dtd\784c.dtd, line 206 in declaration parameter 4:
       Duplicate specification occurred for "%sect"; duplicate ignored
sgmls: In file included at \ws\9485.dtd, line 59:
       Warning at c:\ws\977j.dtd, line 124 in declaration parameter 3:
       Duplicate specification occurred for "note5"; duplicate ignored

TOTALCAP 163718
ENTCAP 13696
ENTCHCAP 13024
ELEMCAP 6112
GRPCAP 37856
EXGRPCAP 992
EXNMCAP 1888
ATTCAP 65632
ATTCHCAP 1635
AVGRPCAP 22624
NOTCAP 96
NOTCHCAP 163
IDCAP 0
IDREFCAP 0
MAPCAP 0
LKSETCAP 0
LKNMCAP 0

6.3 Sema Mark-it Parser Log

```
ATTCNT --100-- 48
ATTSPLEN --960-- 0
BSEQLEN --960-- 0
DTAGLEN --16-- 0
DTEMPLEN --16-- 0
ENTLVL --16-- 3
GRPCNT --32-- 22
GRPGTCNT --96-- 27
GRPLVL --16-- 5
LITLEN --3048-- 730
NAMELEN --32-- 13
NORMSEP --2-- 0
PILEN --240-- 0
TAGLEN --960-- 0
TAGLVL --24-- 0
MSDLVL --24-- 2
TOTALCAP --200000-- 172565
ENTCAP --200000-- 16928
ENTCHCAP --70000-- 13106
ELEMCAP --70000-- 6112
GRPCAP --70000-- 43392
EXGRPCAP --70000-- 992
EXNMCAP --70000-- 1888
ATTCAP --200000-- 65632
ATTCHCAP --70000-- 1635
AVGRPCAP --70000-- 22624
NOTCAP --70000-- 96
NOTCHCAP --70000-- 160
IDCAP --70000-- 0
IDREFCAP --70000-- 0
```

6.4 D977JB0.ORG

```
<!-- ************************** START OF FILE **************************** -->

<!-- SUPPLEMENT NOTICE:  This file is made available to provide the user with
a digital representation of the DTD found in Appendix D of MIL-M-5096E.
This file is incomplete without MIL-M-5096E. -->

<!-- NOTE: The start and end of this file are marked with a row of asterisks.
If these rows are not present the file may not be complete! -->

<!-- MIL-M-9977J Nonnuclear Munitions Loading Procedures DTD -->

<!-- The following set of declarations may be referred to by
using a public entity as follows:

<!ENTITY % mnnmunld PUBLIC "-//USA-DOD//DTD MIL-M-9977J NML//EN">
%mnnmunld; -->

<!-- NOTE: In order to parse the following DTD subset alone,
append the following statement to the beginning of the file:

    <!DOCTYPE docnnmunld [

and the associated "]>" to the end of the file. -->

<!-- ENTITY DECLARATIONS -->

<!ENTITY % bodyele  "(suppinfo, munitldproc+)">

<!ENTITY % mnucbasld PUBLIC "-//USA-DOD//DTD MIL-M-9977J
NBL//EN">

<!ENTITY % genl "(gensafreq, emergproc, airdesc, genproc, airprep, fctfuncchk,
strayvoltchk, section*)">

<!ENTITY % unll  "(safing, preunload, unload, fuzerem)">

<!ENTITY % rackl  "(airprepld, loadprep, (cartins & load), postldinsp, dlayflt,
priorlnch)">

<!ENTITY % shortitleuse "INCLUDE">

<![ %shortitleuse; [

<!ENTITY % shortitle ",  shorttitle?" >
```

```
]]>

<!ENTITY % shortitle " " >

<!ENTITY % titles "title %shortitle;" >

<!ENTITY note5 "With local commander approval, the following fuzes may remain installe

%mnucbasld;

<!-- ELEMENT and ATTRIBUTE LIST DECLARATIONS -->

<!ELEMENT docnnmunld - - (front, body, rear?)   +(pgbrk | brk) >
<!ATTLIST docnnmunld    service % service; 'AF'
                        %secur;
                        %docatt;>

<!ELEMENT fuzerem       - o  (%nparcon;, subpara2*) >
<!ATTLIST fuzerem       tocentry %yesorno; "1"
                        shortentry %yesorno; "0"
                        verified %yesorno; "0"
                        %bodyatt;
                        %secur; >

<!ELEMENT munitldproc     - - ( (%lp1;, unloadproc) |
                                (munitldsect, munitldsect+) )
                               +(figure | table | foldout) >
<!ATTLIST munitldproc   tocentry %yesorno; "1"
                        shortentry %yesorno; "0"
                        %bodyatt;
                        %secur; >

<!ELEMENT suppinfo       _ _  (%titles;, %genl;)   +(figure | table
                               | foldout) >
<!ATTLIST suppinfo      tocentry %yesorno; "1"
                        shortentry %yesorno; "0"
                        %bodyatt;
                        %secur; >

<!-- *************************** END OF FILE *************************** -->
```